

FCC Orders and Narrow Banding – 2013

The FCC has set forth specific deadlines to meet for narrowband radio systems. The first deadline took effect January 1, 2005, with the final deadline taking effect in 2013.

A simple definition of narrow banding is a way to make two radio frequencies out of one radio frequency. The frequency is not cut in half, but the middle of the frequency is left in place with the lower and upper sides of the frequency cut away to create new radio frequencies when added to the lower or upper side of the adjacent frequency.

On January 1, 2005 - VHF/UHF narrowband interoperability channels became primary usage channels while adjacent channels became secondary usage if they were still wideband emission. Existing users on interoperability channels are now secondary to interoperability usage. Secondary usage means there is no interference protection and could be required to cease operation if they remain wideband and another entity operating in a narrowband configuration wants the frequency.

January 1, 2008 - new operations on 150.775 and 150.790 will be limited to narrowband only. Existing wideband may continue until January 1, 2013.

January 1, 2013 – all public safety radio systems below 512 MHz must be narrowband compliant. This means all portables, mobiles and infrastructure.

Utah's Radio Communications Systems

Public Safety Radio Systems in Utah are a collection of networks, installed by various agencies to meet the requirements of Law Enforcement, Fire, EMS, Corrections, Transportation and other governmental users. One of the desires of agencies in the public safety business is the ability to communicate with agencies around their jurisdiction while enjoying the autonomy of operating their individual network. In today's economic times, that is difficult for many agencies. With the limited spectrum (frequencies)

available, it is also necessary for agencies to share resources, develop common infrastructures and share the services necessary to do business

In Utah, there are several systems. The Utah Communications Agency Network (UCAN) operates a regional (12 county) 800 MHz trunked radio system. The City of Salt Lake operates an 800 MHz system, which covers the city, but is connected to the UCAN system for interoperability. The state of Utah operates a 150 MHz system covering the state in areas where UCAN is not used. Many cities and counties operate individual 150MHz systems covering their political boundaries. In many cases efforts have been established to ascertain how and what operational connections can be established.

The following briefly describes the major networks in Utah today.

Utah Communications Agency Network

Currently, the UCAN system serves 125 agencies, counties and municipalities. This system is significantly larger than was initially conceived during the Leavitt Administration. The initial system design was to primarily provide communication services for state agencies within five counties. In the late 1990's the system was expanded when Utah was awarded the bid for the 2002 Winter Olympic Games. At that point, the design was increased to provide service for 8 counties, the municipalities within those counties and specific state agencies desiring additional coverage. Today the system covers 12 counties and 85% of the states population. Utah Highway Patrol, UDOT, and Natural Resource activities required expanded coverage within the Wasatch Front as well as around the population hubs throughout the state. UCAN's coverage has accommodated both Utah Prisons and surrounding areas for Adult Probation and Parole activities. The system has interoperability channels and is networked to 31 remote dispatch centers across the state. The centers are linked to remote 800 standalone repeaters, which can be patched to services thru the dispatch centers to facilitate minimal interoperability with the 150MHz system in rural Utah. The Utah Communications Agency Network Act was enacted in 1997 and is codified in Title 63C Chapter 7 of the UCA. The purpose of this chapter is to establish an independent state agency and a board and executive committee to administer the creation, administration, and maintenance of the Utah Communications Agency Network to provide public safety communications services and facilities on a regional or statewide basis for

the benefit and use of public agencies and state and federal agencies. Salt Lake City Corporation also operates a standalone 800 MHz system covering Salt Lake City. It is physically and electronically tied to the UCAN network for the purpose of sharing common talk groups and communications infrastructure.

Utah's Other Radio Communication Systems

The communications network outside the UCAN system consists of state and county systems operating in the 150MHz band. The state has the majority of resources located in rural parts of Utah due to the need to provide communications for state agencies. In many instances, counties with adequate resources have constructed their own. In many cases, agreements are in place to share those resources and channels for interoperability purposes. The primary concern for these systems is the lack of room to expand to meet growth. This is especially true in the areas of Washington County, Cache Valley and other growth areas. Spectrum (frequencies) below 512 MHz are under FCC order to be narrow banded. This will change the allowable operational capabilities of these frequencies and create a difference in these operations. Transmitter power will be reduced requiring more sites. New infrastructure, mobiles and portables will be needed. Investment will be needed. While with adequate investment this system will work, the future of public safety communications lies in the upper 700 – 800 band. This is where the research and development is taking place. This is where manufacturers are developing product. This is where the FCC is allocating frequencies for expansion. Agencies investing in the future communication systems are focusing in the upper band.

Other States Communications Systems

Arizona

The state is currently formulating a plan and organization to develop a statewide system in 700 MHz. Several cities (Phoenix-Mesa) have already developed 800 MHz infrastructures supporting their needs.

Colorado

Currently a statewide 800 MHz system is operated by the state of Colorado. This system serves many local governments and agencies. The system supports about 24,000 radios. There are individually owned and operated systems within the population centers of Denver and Colorado Springs. There are interoperability channels established between the systems.

Idaho

A new 700 MHz system is under construction in the Boise area. This system includes several counties and cities and the intent is to construct it statewide.

Nevada

The state is in the planning process to develop a statewide 800 Mhz system. Agencies are currently using an aged 800 MHz infrastructure system. Recent attempts to develop a 150 MHz system were thwarted because of the lack of frequencies. Major metropolitan areas in Reno and Las Vegas currently have 800 MHz infrastructures – they have Mothballed their 150 MHz system.

New Mexico

The state currently has a collection of many individual systems serving individual agencies. Interoperability is accomplished by trading radios and channel sharing. At this point, there does not appear to be a centralized effort to develop a statewide radio communication system.

Wyoming

The state is developing a statewide 150 MHz system. The system is designed for state and local users who want to participate. They are struggling to find enough 150 frequencies to complete the network. Costs to develop the network are higher than originally anticipated.

What Utah Needs To Do

At a state level, our goal should be to have a universal radio infrastructure serving all state agencies as well as Utah's local governments. This system will most likely be constructed of various components to facilitate the ability of agencies to talk to one another. The system must meet the needs as our population grows, our needs change, and all of our state agencies and local governments work, respond to mutually significant situations.

A legislative task force, hopefully formed in 2008, to report to the 2009 Utah State Legislature to study Utah's radio communication systems and make specific legislative recommendations as to how the state responds to the FCC requirements as well as provide a blueprint for the future that Utah State and local government should take to improve communication interoperability. Specifically this task force should be charged with recommending a vision, direction, funding sources and responsibilities on how to move Utah forward to meet the ever increasing demand for interoperable communications for public safety providers.

Similarly, Utah's local governments not on a narrow band system should begin to make preparations for the FCC mandated narrow band compliance. They should:

1. Not purchase any VHF/UHF radio equipment that is not FCC-narrowband-compliant.
2. Review FCC radio license. It needs to be determined if you need to be narrow band already (if the frequency being used is adjacent to an interoperability channel).
3. Inventory current radio equipment. Determine which are narrowband-compliant and FCC-type accepted.
4. Make sure FCC radio license is current with correct contact information, emissions and construction/build-out and FCC required notifications.
5. When purchasing new VHF/UHF radio equipment, make sure it is FCC-type-accepted for narrowband use.
6. Be aware of the ripple effect – when another agency becomes narrowband compliant, then you must be narrow band compliant.

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